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Listing and Amendments to the Claims

This listing of claims will replace the claims that were published in the PCT Application:

1. (currently amended) A video decoder ~~(200)~~ for decoding video signal data for an image block with first and second reference picture indices to predict the image block, the decoder comprising a reference picture weighting factor unit ~~(280)~~ responsive to the relative positioning between the image block and first and second reference pictures, the reference picture weighting factor unit having an output for determining implicit weighting factors corresponding to each of the first and second reference picture indices, respectively.

2. (currently amended) A video decoder ~~(200)~~ as defined in Claim 1 wherein the reference picture weighting factor unit ~~(280)~~ comprises:

an interpolation portion for interpolating between portions of two reference pictures disposed one before and one after the image block in display order; and

an extrapolation portion for extrapolating from portions of two reference pictures disposed both before or both after the image block in display order.

3. (currently amended) A video decoder ~~(200)~~ as defined in Claim 1, further comprising a variable length decoder ~~(210)~~ in signal communication with the reference picture weighting factor unit ~~(280)~~ for providing the first and second reference picture indices to the reference picture weighting factor unit.

4. (currently amended) A video decoder ~~(200)~~ as defined in Claim 1, further comprising a motion compensator ~~(260)~~ in signal communication with the reference picture weighting factor unit ~~(280)~~ for providing motion compensated reference pictures responsive to the reference picture weighting factor unit.

5. (currently amended) A video decoder ~~(200)~~ as defined in Claim 4, further comprising a multiplier ~~(270)~~ in signal communication with the motion compensator ~~(260)~~ and the reference picture weighting factor unit ~~(280)~~ for applying an implicit weighting factor to a motion compensated reference picture.

6. (currently amended) A video decoder ~~(200)~~ as defined in Claim 1 wherein the video signal data is streaming video signal data comprising block transform coefficients.

7. (currently amended) A video decoder ~~(200)~~ as defined in Claim 1, further comprising:

prediction means for forming first and second predictors from two different reference pictures;

combination means for combining the first and second predictors together using their corresponding implicit weighting factors to form a single combined predictor.

8. (currently amended) A video decoder ~~(200)~~ as defined in Claim 7 wherein the two different reference pictures are both from the same direction relative to the image block.

9. (currently amended) A method ~~(300)~~ for decoding video signal data for an image block, the method comprising:

obtaining ~~(312, 313, 314)~~ a plurality of reference picture indices for the image block, each index corresponding to a particular reference picture;

determining ~~(315, 316)~~ implicit weighting factors responsive to the relative positioning of the image block and the plurality of reference pictures indicated by the plurality of reference picture indices and corresponding to each of the received plurality of reference picture indices;

retrieving ~~(318)~~ a reference picture corresponding to each of the received plurality of reference picture indices;

motion compensating ~~(320)~~ the retrieved reference pictures; and

multiplying ~~(322)~~ the motion compensated reference pictures by their corresponding implicit weighting factors, respectively, to form corresponding weighted motion compensated reference pictures.

10. (original) A method as defined in Claim 9 wherein obtaining a plurality of reference picture indices for the image block comprises receiving the plurality of reference picture indices with the data for the image block in an implicit mode.

11. (original) A method as defined in Claim 9 wherein obtaining a plurality of reference picture indices for the image block comprises deriving the plurality of reference picture indices from the data for the image block in a direct mode.

12. (original) A method as defined in Claim 9 wherein motion compensating the retrieved reference pictures comprises determination of motion vectors for the retrieved reference pictures relative to the image block.

13. (original) A method as defined in Claim 9 wherein determining implicit weighting factors comprises:

receiving a slice header field for the image block;

determining a picture order count from the slice header field;

using the picture order count to determine the relative positioning of the image block and the plurality of reference pictures.

14. (original) A method as defined in Claim 9 wherein the relative positioning of the image block and the plurality of reference pictures corresponds to the relative display times of the respective pictures.

15. (original) A method as defined in Claim 9 wherein determining an implicit weighting factor comprises at least one of:

interpolating between portions of two reference pictures disposed one before and one after the image block in display order; and

extrapolating from portions of two reference pictures disposed both before or both after the image block in display order.

16. (original) A method as defined in Claim 9, further comprising:

combining the weighted motion compensated reference pictures to form a combined weighted motion compensated reference picture.

17. (original) A method as defined in Claim 9, further comprising adding the combined weighted motion compensated reference picture to the data for the image block to predict the image block.

18. (original) A method as defined in Claim 17, further comprising storing the predicted image block as a reference picture for future retrieval.

19. (original) A method as defined in Claim 9 wherein the video signal data is streaming video signal data comprising block transform coefficients.

20. (original) A method as defined in Claim 9, further comprising:

forming first and second predictors from two different reference pictures;

motion compensating each of the first and second predictors;

combining the first and second predictors together using their corresponding implicit weighting factors to form a single combined predictor.

21. (original) A method as defined in Claim 9 wherein determining implicit weighting factors comprises pre-computing at least one weighting factor and storing said at least one weighting factor for re-use.

22. (original) A method as defined in Claim 9, further comprising:

storing the relative positioning information of the image block and the plurality of reference pictures; and

accessing the stored relative positioning information to compute the implicit weighting factors by using the reference picture indices to indicate which stored positioning data to use.

23. (original) A method as defined in Claim 22, further comprising:

reusing the relative positioning information in direct mode to eliminate the need for recalculation.

24. (original) A method as defined in Claim 22, further comprising:

performing division calculations for each coded picture and for each value of position and scaling that result by a constant factor to allow for more efficient shift operations rather than division operations for calculating the prediction values for each pixel.

25. (original) A method as defined in Claim 20 wherein the two different reference pictures are both from the same direction relative to the image block.